C-A SCHEDULED SHUTDOWN –MONDAY APRIL 5 TO APRIL 7, 2004
INCLUDES FOUR HOUR SHUTDOWN FOR AGS ON APRIL 5TH

RESULTS TO DATE INCLUDED: APRIL 2 RHIC JOBS & April 5 AGS JOBS
RESULTS: RHIC SHUTDOWN APRIL 5-7

R. Zaharatos – **1100HRS. Thursday April 8, 2004**

C-A SHUTDOWNS SCHEDULED FROM APRIL 2 TO APRIL 7, 2004:

April 2 0700-1200	**RHIC**	**Access to complete connections to Rotators and test.**
Complete except for Rotators		**Hi-pot Snakes**
		Transport Jet Target into tunnel at Sect. 12
	AGS	**Continue set-up for Polarized Protons.**
April 5 0700-1100	**AGS**	**- Access for F20 & G7 PUE Pre-Amps. – install noise**
All Complete		**Filters.**
		- Access for RF Sta. C – replace feedback ampl..
		- Replace disconnect switch for the A18 Gamma TR P.S.(Requires sub-station shutdown – see list *)**
		- D.C. Bumps G & H - Check temperature tapes indication
April 5 0700 to	**RHIC**	**Jet Target Installation**
April 7 1800		**End RHIC shutdown(all sectors secured except possibly Sect. 12 Jet Target)**

NOTE: Booster remains operational for NSRL schedule.

*****Power Shutdown For A18 Gamma Tr Disconnect Switch Repair**

The following areas are affected:

The L18 Power Distribution Box feeds the following:

L20 RF Cavity ENI P.S.'s.

Ckt A - L18A - BTA P/S. Part of LOTO

Ckt B - L18A - Building Power - Fire Alarm is on this circuit. Some Equipment Rack power.

Ckt C - L18A - L20 Septum P/S. Part of LOTO

Ckt D - L18A - Air Conditioners

Ckt E - A18 - Gamma TR P/S. The A18 house power is NOT fed from this circuit

Ckt F - A10 House

The A10 House contains:

1/3 of the AGS Vacuum System (K13 to C13 and HEBT 1, 2, & 3).

The A10 UPS is fed from Bldg 929, so it will not be affected by turn off the power.

The Vacuum Controls are in the A10 UPS Panel - so they will stay on.

Fire Alarm is fed from the house power.

L18 A UPS Power come from A10 UPS - This will remain on.

HITL feed will remain on as it is on Substation 913, Circuit Breaker #1

L18 Power Distribution Box is on Substation 913, Circuit Breaker #2.

Operations Schedule for Maintenance and Maintenance recovery 2 April 04 through 5 Apr 04.

Friday 2 April 04

- 0600: Cryo-system partial shutdown for vibration test.
- 0700: Open RHIC for restricted access, all areas except dumps. Open dump areas on RCA for surveys. 1MCR, 1HP

Note: Contact G. Ganetis and ask him to inform you when he is done with areas. Sweep them as they become available.

- 1300: End any access, complete outstanding sweeps.
- 1430: RHIC on.

Monday 5 April 1, 2004

- 0700: RHIC access as above. LOTO AGS for controlled access. 2MCR/CAS

NOTE: At some point electricians may need to check the breaker for L20 angle and position, if so use equivalent LOTO (L18 A-A). See R. Zaharatos or P. Sampson for details.

- 0700: Open Switchyard.
- 0800: J. Gould to reset network switches for controls system.
- 0900: CAS to open 12 o'clock berm.

Coordinator changes LINAC BS Mode to BS1& BS2 (not DH1) –NO POLARIZED PROTONS TO HEBT. BLIP ON. Booster On for NSRL.

NOTE: IF there is no PP activity in the early a.m., LOTO and surveys should be completed prior to 0700.

- 1100: Lock the AGS , sweep Switchyard, remove AGS LOTO and restore beam.

Wednesday 7 April 1, 2004
AM Sweep RHIC except 12 o'clock.
PM Sweep 12 o'clock restore beam ....1800??

JOBS STATUS CODES: **C** complete **IP** in-process **RS** reschedule **CAN** cancelled ***** additions

RHIC JOBS

COLLIDER P.S. GROUP - ZAPASEK/BRUNO

Maintenance done on April 2nd

Tunnel work:

Snake Work

1) (DONE) Connect quench detection wires in 5C, and 7A. **(902A)**
2) (7C DONE ONLY) Alcoves 7A, 7C and 5C should be unlocked when this request is made **(Gregg)**
3) (DONE) Check operation of ground current monitoring chassis in alcove 3c. **(Gregg & Mitch)**
4) (3C, 9C, 9A, 7C DONE) Work with George and Paul on hi-pot of snake magnets and p.s.'s, starting at 3c and then moving onto others. This will involve hi-potting magnets and p.s.'s or magnets without p.s.'s first. If the ground fault is on the p.s. end then start trouble shooting the qpa/p.s./3u chassis/iso-amp chassis/ac compartment. Bring paperwork. **(Gregg & Mitch)**
5) (DONE) Check operation of ground current monitoring chassis starting in alcove 9c. After 9c is done you can check the rest of the alcoves until all are checked. You do not need to do 3c because Gregg & Mitch are doing that alcove. If Gregg and Mitch cannot do it they will let you know. The other alcoves you should do after 9c are 5C, 7A, 7C and 9A. Do 9A last, if possible. **(Rich C & Joe)**
6) (DONE –setpoint card offset slightly positive) Investigate and fix oscillating yo8-rot3-2.3-ps. **(Jeff & Don).**
7) (DONE) Install the newly made setpoint cards into alcoves 5C, 7A and 7C. This can be done right away, does not need to wait for hi-pot to be done. **(Tom & Fred)**
8) (3C, 9C, 9C, 7C DONE) Set DCOC to 350A (5.83V) only on snakes and rotators that have been successfully hi-potted. This should be for alcoves whichever alcoves are done. Most likely this will be alcoves 3c, 9c and 9a. Check with Don around 11:30 to make sure. **(Gregg & Mitch)**
9) (NOT DONE) Put labels on all snake and rotator current reg cards that error adjust = 3v and error delay = 1.67V. The label should say the new card should get adjusted to be the same after being swapped out. We need to access alcoves 3c, 9c, 5c, 7a, 7c and 9A for this work. HOLD OFF ON THIS, SETTINGS NOT PERMANENT YET.

Correctors

(DONE) Swap out yo4-tv11-ps AND bi9-octd-ps. Replace yo4-tv11 with serial number 338 in. **(Brian and Rich K).**

ATR
Looked at Remote I/O fault bits for 1007W on computer. Will use to send to control system. (Don).

Maintenance to do on April 5 – April 7
HIGH PRIORITY
Tunnel work:
Snake Work
(DONE) Alcoves 7A and 5C should be unlocked when this request is made **(Gregg)**
(DONE) Check operation of TAPE on snakes and rotators.
10) (DONE) Work with George and Paul on hi-pot of snake magnets and p.s.'s in 5C and 7A **(Gregg & Joe)**
11) (DONE) Set DCOC to 350A (5.83V) only on snakes and rotators in alcoves 5C and 7A after they have been successfully hi-potted. **(Gregg & Joe)**
12) (DONE) All snake and rotator D connectors wiggled on rear of p.s. rack. Tap test done as well. **(Gregg, Joe, Tom).**
13) (DONE) All overvoltage limits and oc limits maxed out on power tens. Found bo7-rot3-2.3 (current limit knob) and yi3-snk7-2.3 (voltage limit knob) had been set too low **(Gregg, Rich C).**
14) Put labels on all snake and rotator current reg cards that error adjust = 0.75v and error delay = 1.67V. The label should say the new card should get adjusted to be the same after being swapped out. We need to access alcoves 3c, 9c, 5c, 7a, 7c and 9A for this work. HOLD OFF ON THIS, SETTINGS NOT PERMANENT YET.

Gamma-T Work
1) (DONE) Yo12-qgt-ps and yo9-qgt-ps are still tripping to the off state. Swap out 3u chassis of yo12-qgt-ps with the one in the test rack in 7w. Swap out the node card cable of yo12-qgt-ps. Run the yo12-qgt-ps 3u chassis in the test rack in 7w and examine the inside of it. Swap out the node card cable of yo9-qgt-ps. **(Jeff & Tom)**

CORRECTOR
Bi12-qs3-ps was swapped out **(Brian and Rich K)**

Air Conditioner Test in 5B
Conducted

Service Building Work:
Ring Magnets and PS's
1) (DONE) Hi-Pot Ring – disconnect mains. **(George)**
6000A Quench Switches
1) (NOT DONE) Check yellow Current monitoring chassis and shunts in all 4 quench switches **(Rich C).**
2) (NOT DONE) Replace the Y9 SCR current readback chassis with the spare that had the right resistors installed. **(Rich C).**
3) (DONE) Re-arranged dump resistors at 1010A **(Brian and Rich K)**
IR supplies and QPA's
1) (NOT DONE) Check connections between p.s. and qpa of b2-dh0. **(Joe &Gregg)**
2) (NOT DONE) Install more new qpa fan switches in 1012A **(Do not do now)**
3) (DONE) Install new pc boards for dyna aux contact fix. Y12-dh0-ps & b12-q6-ps. **(Joe)**

4) (DONE) Set DCOC to 175A for all qf8's and qf9's **(Tom & Jeff)**

Joe P Software testing

1) (NOT DONE) Possibly run TAPE and watch if it changes command to 6000A quench switches from On to Charge.
2) (DONE?) Test New Timing resolver software. This new version will calculate the delays of each signal after the trip. **(Wing and Joe P).**

Main Power Supplies **(Carl, Fred)**

1) (NOT DONE) Work on current monitoring problem.
2) (NOT DONE) Work on Reg error problem on blue quad. This will require the links being up.
3) (NOT DONE) Fix overshoot on mains.

Correctors

1) (NOT DONE) Run up remaining alcoves to 10amps and come up with Resistance of load. **(Don)**

ATR p.s.'s

a. (DONE) Swap out XD31T with spare 2kW and fix XD31T current readback to MADC **(Don & Mitch)**
b. (DONE) Test program that looks at remote I/O going down for PLC. **(Don & Joe P)**
c. (DONE) Run and old AGS p.s. in the ATR line with error readback removed on I reg card. **(Don)**
d. (NOT DONE) Swap out UQ7 and XQ2 toldo boxes because of frame errors and crc errors. **?????**

Low priority

1) Install one production type Voltage Lead Monitor board on Q6 in sector 10. **(Mitch)**

Lower Priority

IR Supplies, QPA's AND Sextupoles p.s.'s

1) Check fans on dynapowers for yearly maintenance **(Mitch and)**
2) (DONE will need to do again) Test all spare sextupole current regulators in one sextupole p.s. with a ramp. **(Rich C and Joe)**
3) In 1010A remove node card cable on port 11 (from warm dipole p.s.) and replace this node card in rack R10AQD2. Ports 9 and 10 are bad.
    a. In 1012A remove node card cable on node card number 12 port 11 for warm dipole.
4) Keep an eye on bi9-tq4 fiber optic card (or curr reg card) . This p.s. had a 2 amp offset between the iref and wfg on 1/11/04
5) AC Power line monitor problems at 12A and 8b. See PMViewer.
6) On 2/11/04 at 2:22:31 bi5-sxf-ps tripped on a lead flow interlock. For some reason this caused yo5-sxd-ps to also trip. Yo5-sxd-ps time stamp is 2:22:29. It should be later than bi5-sxf-ps. Yo5-sxd-ps only shows a quench fault. The current and voltage spike tripping the quench detector and that trips yo5-sxd-ps. There is some kind of crosstalk between these 2 p.s. that should be investigated.

Correctors

1) Bi8-oct3 and bi8-dod3 showed "Local/Reset Node card on 2/7/04 and 15:28:46. Keep an eye on this.

Other Lower Priority stuff

ATR p.s.'s in service buildings
Try to put remote I/O alarm bit in for one PLC and try to test one PLC with Joe P to see if it works.

Try cutting wire on old AGS type p.s.'s regulators that brings error readback to MADC. Does this improve Iref/Current readback agreement?

Keep an eye on but don't do anything yet.

1) **Keep an eye on bi12-qs3, it tripped on an error signal fault on 12/3/03 at around 10:20AM. It also tripped once on 12/4, 2x on 12/6 and once on 12/9 and once on 3/5 at 6:29. This one had C623 cut out of it so I guess it does not fix the error problem.** REMOVE FROM LIST, SWAPPED IT OUT

Bi8-sx3-ps tripped on an error signal fault once on 12/31/03 at 22:50:11. Looks like a current reg error. Keep an eye on.

Beam Components and Instrumentation – D. Lehn

C 1. Jet Polarimeter– installation and setup.
RS 2. Stoicastic Cooling - Pick-up tank in sect. 11 - test inchworm controls
C 3. Sect. 7 BPM – a) Move all BPM Modules into the 7C Alcove
b) Investigate module problems
c) Move BPM VME to new rack
d) Swap out bad critical BPM Modules with spares
C 4. Gap Cleaning – Check Chiller Reservoirs
C 5. Sectors 1 & 2 – a) MBPM fine Tuning
b) Schottky Cavity fine tuning
c) Two Meter Kickers fine tuning
d) QMM(Quad Monitor) fine tuning
6. High Frequency Instrumentation
C a. Sect. 1 & 2 moveable BPM Schottky Cavity and Two Meter Kickers – access for fine tuning as required
C b. QMM(Quad Monitor) – will also require access for tuning
C 7. Vertical AC Dipole has developed a problem with a PA Module. All work will be external in 1004A where we will pull the module and troubleshoot

Controls Hardware(Venegas)
C 1. Install event link cables for BPM chassis

Controls Software(Morris)

Cryo Controls(Masi)
C 1. Snake at Six O'Clk. – wiring changes for the lead flow temperature sensor.

Power Distribution(Nehring)

C 1. 1006B UPS – Inspect power panelboard and the external bypass switch. We found five loose connections in the bypass switch. The extra 250 Kcmil ground wire for the tray should be completed in a couple days.
C 2. Finish hooking up permanent power to Crane at sector 7 - 8 hours
C 3. Re-support tray in 1007 - 6 hours
C* 4. STAR – added bonding to electrical panel on platform

RF Group – N. Laloudakis

C 1. Install shunts in Common Cavities(Vacuum Grp.)
C 2. Replace Yellow Storage Cavity 3.3 window.
C 3. RF conditioning(sect. 4 secured) – begins when vacuum is ready following window change. Estimated to be Tues. morn.
C 4. Repair YS3.3 Blower
C* 5. 1004A compressor – replaced heat exchanger
C 6. Repaired 480VAC contactor for fil. blowers

Vacuum Group – S. Gill

C 1. Change one Yellow Storage Cavity window
C 2. Install gas jet experiment
C 3. Sect. 4 - Install shunt in common cavities: vent IR / support valve / install shunt / pump down & leak check
C 4. Sect. 5 - Check helium backround at bi-5
C 5. Sect. 10 - Helium leak check
C 6. Sect. 10 - Beryllium pipe rad readings (contact R. Pak first)
C 7. Photograph gauge controllers/cables/outlets @ CQS locations for OSHA Violations Bureau
C * 8. Replace yo9-cc-pi4.2 gauge
C * 9. Check turbo at bo6-tmp-pi8.1(reset and replaced foreline iso valve)

Water Systems Group

C 1. PHOBOS and BRAHMS 1010 and 1002 – Install conductivity probes
C 2. STAR, 1006 - check MCW temperature control readback
C 3. STAR, 1006 - test main magnet pump

Other RHIC Access Jobs

C **Triplet vibration measurements** - primary areas are 5 o'clk. and left side of 6 o'clk. IR.(Ping He/Christoph Montag)

RHIC/FES Division – A. Pendzick

C **Jet Target installation in Sect. 1012**

STAR - Access for experimenter
C Change Magnet pole tip(Brown)

PHENIX - Experimenter access

C Add shielding (2 buoy anchors) in sector 7(Pearson)

BRAHMS - Experimenter access

C 1. Install conductivity probes(Water Sys. Grp.)

PHOBOS - Experimenter access

C 1. Install conductivity probes(Water Sys. Grp.)

FACILITIES

C 1. 1004A - The RF air compressor at 1004A will be serviced on Monday (4-5-04) from 0800 to 1400. This compressor is located outside the RHIC ring(Diaz)

AGS(external)

RS 1. Vacuum - Troubleshoot the datacon networks for A3, D3, I3, J3 and J13 sector valve alarm problems (currently masked)
RS 2. Vacuum – A10, E18, and H10 clear DNA read-backs.
RS 3. Repair H10 area storm drain pump(Diaz/P.E.)
C 4. Drain rain water from L18A wiring trench and repair sump pump(P.E.)
RS 5. RFMG, 929 - Replace Ethernet boards on Sub PLC unit(Water Sys.)
C 6. TWR 1-911 - Switch Twr Pumps(Water Sys.)
C 7. Siemens – Move/install new exciter racks from MG Room to Rectifier Room
C 8. Siemens MG – inspect brushes and laser cleaning
C 9. Replace 480VAC switch for A18 Hse. Gamma TR P.S..(Requires opening sub-station circuit breaker – see list of effected equipment)
C 10. Inspect and perform maintenance on all disconnect switches fed from L18A-A
C 11. HEBT 1, 2, & 3 vacuum recovery from scheduled power outage.(Vac. Grp.)

AGS RING

RS 1. **E20 Snake**
Barriered testing to investigate noise on readback.

RS 2. F5 Septum and F10 ejector – heat run.(Bannon)
RS 3. Ring Grounds – Inspection only if ring on restricted access (HP Survey)
RS 4. Ring Video – Check Following Locations & repair as necessary (H20/E15/CF011/CF100/F5/F10) F5/F10 will be from aisle
RS 5. C15 Polarimeter – Continue setup. Replace all Silicon Detectors
6. Measure for trench covers at F8 and I10.
RS 7. Ring Motion – Check Following Locations & repair as necessary (H20/E15/CF011/CF100/F5/F10/Splitters). F5/F10 will be from aisle.
RS 8. Turn-on testing of SEB Switchyard magnets
RS 9. AGS-913 - MM PSI Check across from ATR injection line, H-14 area on Cat Walk
RS 10. Powered testing of F5 Septum and F10 Ejector.(Bannon)
C 11. IPM – continue HV troubleshooting(Beam Comp.)
C 12. PUE Pre-Amps. – install noise filters for F20 & G7

RS 13. Assist with C-15 Polarimeter work..vent sector, etc.(Vacuum Grp.)
C 14. Investigate SEB water leaks on CD101 and CP103(replaced hose and additional fittings)
C 15. RF Station C – replace feedback amplifier
C 16. D.C. Bumps G & H - Check temperature tapes indication(approx. 54deg. C)
C* 17. Replaced intermittent crash switch at DE main aisle.

ATR

Collider Electrical Power Supplies(Zapasek/Bruno)

C Test the XARC90 and XD31T and XLAMT power supplies on April 5th. Replace the XD31T because its current readback is broken.

C Then I need to run the new XD31T p.s. with the XARC90.

Normally, during a maintenance day, the XARC90 is tripped on security. So we need to schedule the securing of SWM, WARC20, UARC8 and UARC4 so I can turn on the XARC90.

C I will need to test for about 4 hours. This time includes replacing the p.s..

BOOSTER RING

Vacuum

RS 1. Check & drain air lines of water(Vac. Grp.)
RS 2. Ring Grounds – Inspection only if ring on restricted access

BOOSTER EXTERNAL

RS **BPM's/ Controls Grp.**

1. Investigate A3(open) and C3(shorted)
2. Filter assemblies above racks
3. Install air filter assemblies.
4. Repair exhaust fan on C Sect. Rack
5. Phase match B4 cables
6. Re-Phase Match C5 Cables
7. Controls 930A – update Gate Array in PSI's(Buxton)
8. Booster power off at 930 ueb… restore vacuum following scheduled outage … stay late? (Vacuum Group)

LINAC

C 1. Station 1 water system – repack temperature controls.(Water Sys. Grp.)
RS 2. HITL Crossover – check connections on ttb-29-i.g.-039 and 064(Vac. Grp.)

SEB SWITCHYARD

RS
1. Turn-on testing(White Sheets) of SEB Switchyard magnets for D Line run.(Anderson) Requires moving the Radiation Safety LOTO to Booster Extraction(K. Brown)
2. Test/certify SEB beam interlocks(Access Ctrls.)